**3D Flow visualization in virtual reality**[1] NOAH PIETRASZEWSKI, RANBIR DHILLON, MELISSA GREEN, Syracuse University — By viewing fluid dynamic isosurfaces in virtual reality (VR), many of the issues associated with the rendering of three-dimensional objects on a two-dimensional screen can be addressed. In addition, viewing a variety of unsteady 3D data sets in VR opens up novel opportunities for education and community outreach. In this work, the vortex wake of a bio-inspired pitching panel was visualized using a three-dimensional structural model of Q-criterion isosurfaces rendered in virtual reality using the HTC Vive. Utilizing the Unity cross-platform gaming engine, a program was developed to allow the user to control and change this model's position and orientation in three-dimensional space. In addition to controlling the model's position and orientation, the user can scroll forward and backward in time to analyze the formation and shedding of vortices in the wake. Finally, the user can toggle between different quantities, while keeping the time step constant, to analyze flow parameter relationships at specific times during flow development.

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